

Ghent Pain and Disability Study I: Protocol

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1. Goals

1.1. Cognitive interference by pain.

- To investigate the extent to which pain influences particular cognitive functions (speed of information processing and distractibility) compared with healthy controls.
- To search for the best predictor of cognitive dysfunction in chronic pain patients.

1.2. Attentional bias towards pain-related information

- To investigate attentional bias towards pain-related information in chronic pain patients and compare with attentional bias towards pain-related information in healthy controls.
- To investigate the predictive value of attentional bias towards pain-related information for daily pain outcomes (pain severity, disability, avoidance, distractibility) in chronic pain patients.

1.3. The association between self and pain concept in chronic pain patients

- To investigate the association between self and pain concept in chronic pain patients using an implicit attitude test (IAT)
- To investigate whether the association between self and pain concept is stronger in chronic pain patients than in healthy controls.
- To explore the relationship between the strength of the association between self and pain concept and pain outcomes (i.e. pain severity, disability, pain duration) and individual differences (i.e. depression, anxiety, acceptance)

1.4. Interference and facilitation between the goal to control pain and other valuable goals in life

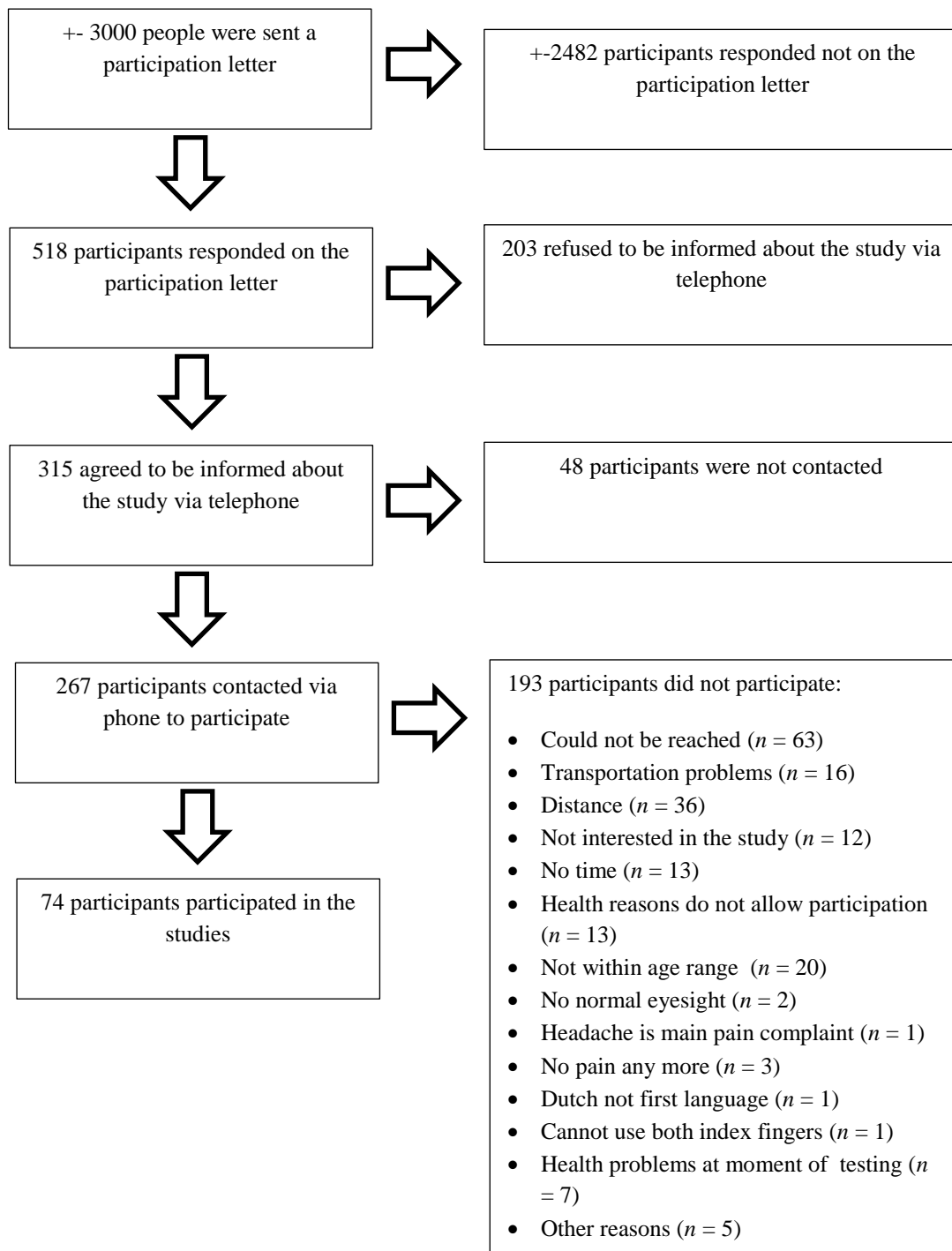
- To investigate the relationship between the goal to control pain and outcome measures (interference, negative affect, disability, well-being).
- To investigate interference and facilitation of the goal to control pain on non-pain goals.
- To investigate relationship between assimilation, accommodation, interference and facilitation

2. Recruitment of chronic pain patients

Time line: In December 2010, members of the Flemish Pain League (about 3000) were sent an invitation letter to participate in a large diary study. Five-hundred and eighteen patients responded to the letter, of which 315 agreed to be contacted by phone. Recruitment of participants was performed in the period February-March 2011.

Inclusion criteria: (1) being aged between 18 and 65 years; (2) sufficient knowledge of the Dutch language; and (3) suffering from pain that lasted for six months or more. Individuals were excluded when headache pain was the most important pain, when they were unable to use both index fingers or when their eyesight was not normal or corrected-to-normal (e.g., by glasses).

Fig 1. Flow chart of recruitment chronic pain patients



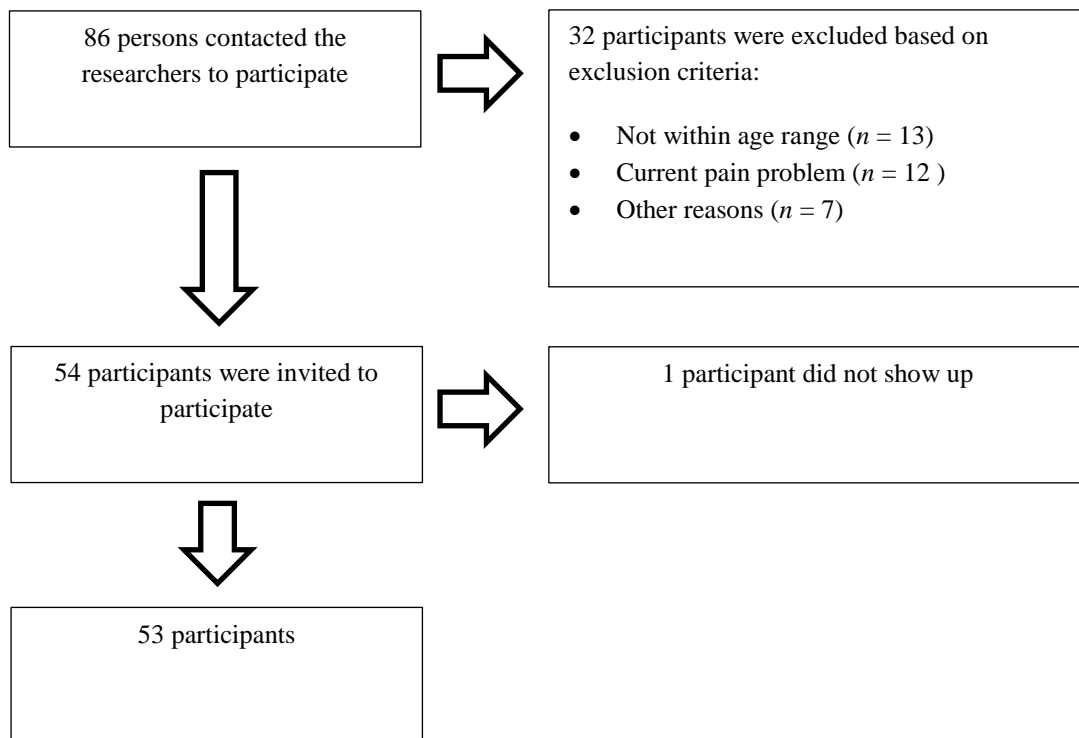
3. Recruitment of healthy controls

Healthy controls were matched on group level with chronic pain patients for age and sex.

Time line: In May-July 2011, an advertisement was placed in several newspapers and flyers were spread to recruit people as healthy control participants. Participants were tested between June-September 2011

Inclusion criteria: (1) being aged between 21 and 65 years; (2) sufficient knowledge of the Dutch language; and (3) currently not suffering from pain. Individuals were excluded when they were unable to use both index fingers or when their eyesight was not normal or corrected-to-normal (e.g., by glasses).

Fig 1. Flow chart of recruitment healthy participants



4. Procedure with chronic pain patients

The procedure for the chronic pain patients consisted of three phases:

- Online assessment of questionnaires
- Laboratory session (at university lab)
- Diary assessment

4.1. Phase 1: Online assessment of questionnaires

In Phase 1, participants filled out several online questionnaires and demographic information. When participants were unable to fill out these questionnaires, they filled them out on a paper version :

- Attentional Control Scale (ACS; Derryberry & Reed, 2002)
- Pain Disability Index (PDI; Pollard, 1984)
- Pain Catastrophizing Scale (PCS; Sullivan, 1995)
- Spielberger State and Trait Anxiety Inventory (STAI; Van der Ploeg et al., 1980)
- Hospital Anxiety and Depression Scale (HADS; Zigmond et al., 1983)
- Positive and Negative Affect Scale (PANAS; Watson et al., 1988)
- Chronic Pain Acceptance Questionnaire – 8 (CPAQ-8; Fish et al., 2010)
- Multidimensional Pain Inventory - Part 1 (MPI-DV Part 1; Lousberg et al., 1999)

4.2. Phase 2: Laboratory session (at university lab)

The laboratory session consisted out of three blocks (of about one hour). Between each block participants had a break of at least 15 minutes .

4.2.1. Block 1

- Spatial cueing paradigm with pain cues (SC task; See Van Damme et al., 2004)
- Spatial cueing paradigm with pain words (SC task; See Chapman, & Martin, 2010)
- Implicit attitude test (IAT; self-other dimension; pain-free of pain- dimension; See Greenwald et al., 2003)
- Questionnaires:
 - STAI-S (before experimental tasks)
 - Questions concerning pain, fatigue, task difficulty, task commitment (e.g., “How much pain do you have at this moment?”, “How difficult did you think the task was?”) (after experimental tasks)
 - Rating of the relevance of the used words (in IAT and SC task) for their daily pain experience (after experimental tasks)

4.2.2. Block 2

- Partial report paradigm- theory of visual attention (TVA; See Bundesen, 1990; Bundesen et al., 2005; Bundesen & Habekost, 2008)
- Questionnaires
 - Cognitive Failures Questionnaire (CFQ; Broadbent et al., 1982)
 - Everyday Memory Questionnaire (EMQ; Sunderland et al., 1983)
 - Questions concerning pain, fatigue, task difficulty, task commitment (e.g., “How much pain do you have at this moment?”, “How difficult did you think the task was?”)

4.2.3. Block 3

- Socio-demographic information and questions concerning pain and fatigue (e.g., “How tired are you at this moment”, “How much pain do you have at this moment”)
- Goal Elicitation via Semi-Structured Interview technique (Little, 1983): participants had to report as many goals as possible that they had for the near future, currently judged to be important, and still expected to be important in the upcoming months

- Goal Appraisal Ratings (Little, 1983): participants had to rate their two most important non-pain goals and their goal to control pain, which was introduced whenever not mentioned during Goal Elicitation, on a number of goal appraisals (i.e., Importance, Difficulty, Control, Stressfulness, Time, Progress, Self-Identity, and Value (Austin & Vancouver, 1996; Little, 1989,1998)
- Questionnaires
 - Intergoal Interference and Facilitation : using an adapted version of the Intergoal Relations Questionnaire (IRQ; Riediger & Freund, 2004)
 - Questions concerning pain, fatigue, task difficulty, task commitment (e.g., “How much pain do you have at this moment?”, “How difficult did you think the task was?”)
 - Modified Version of the Pain Solutions Questionnaire (PaSol; De Vlieger et al., 2006),
 - Illness Cognition Questionnaire (ICQ; Evers et al., 2001)

4.3. Phase 3: Diary

Participants were asked to fill out an online diary at the end of each day for 14 days. Participants were reminded to fill out the diary each day at 7PM by means of a text message. The diary took approximately five minutes to complete. Following outcomes were assessed:

- Pain severity
 - Pain intensity at moment of filling out the diary (1 item)
 - Pain intensity over the past day (2 items)
- Fatigue level over the past day (1 item)
- Disability over the past day (1 item)
- Interference during the past day (1 item)
- Avoidance behavior during the past day (1 item)
- Persistence behavior during the past day (1 item)
- Behavior related to pain control (1 item)
- Cognitive functioning during the past day (3 items)
 - Forgetful (1 item)
 - Distractibility (1 item)
 - Lucidity (1 item)
- Experienced emotions during the past day (12 items)

5. Procedure healthy volunteers

All healthy volunteers were invited to a laboratory of the university. During this session participants filled out several questionnaires and demographic information. Furthermore a number of experimental tasks were performed. Between the experimental tasks participants could take a break.

- Questionnaires
 - Cognitive Failures Questionnaire (CFQ; Broadbent et al., 1982)
 - Everyday Memory Questionnaire (EMQ; Sunderland et al., 1983)
 - Attentional Control Scale (ACS; Derryberry & Reed, 2002)
 - Pain Catastrophizing Scale (PCS; Sullivan, 1995)
 - Spielberger State and Trait Anxiety Inventory (STAI; Van der Ploeg et al., 1980)
 - Multidimensional Pain Inventory - Part 1 (MPI-DV Part 1; Lousberg et al., 1999)
 - Positive and Negative Affect Scale (PANAS; Watson et al., 1988)
 - Questions concerning pain, fatigue, task difficulty, task commitment (e.g., “How difficult did you think the task was?”)
- Experimental tasks
 - Spatial cueing paradigm with pain words (See Chapman & Martin, 2010)
 - Implicit attitude test (self-other dimension; pain-free of pain- dimension) (See Greenwald et al., 2003)
 - Partial report paradigm- theory of visual attention (TVA; See Bundesen, 1990; Bundesen et al., 2005; Bundesen & Habekost, 2008)

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